

Section 2.2 Movement and Transport

Overarching Principle

To develop the SDZ lands in a manner that maximises existing and proposed public transport opportunities, including high quality rail and bus services, and support these opportunities with an integrated network of streets and routes with a clear hierarchy that promotes walking and cycling.

2.2.1 Introduction

The SDZ lands are uniquely positioned within the Metropolitan Area of Dublin to benefit from a wide range of existing and planned transport opportunities offered by the Kildare/Cork Railway Line, the Grand Canal and an existing network of national, regional and local roads that are served by existing bus lanes and planned Core Bus Corridors (CBCs), as well as existing local bus routes.

Some of these existing transport opportunities also create challenges in the form of barriers to movement within and across the SDZ Lands, particularly those created by sections of the canal, the rail line and strategic roads that traverse the SDZ lands. It is also essential that a new and robust urban structure, based primarily on a clear hierarchy of streets and spaces, is created for Clonburris given the current undeveloped nature of the SDZ lands.

This Planning Scheme aims to create a permeable and connected urban structure that overcomes and integrates with barriers to movement, through the development of a framework of routes and spaces that promote place-making and movement by different modes of transport while connecting the SDZ lands with existing communities.

Utilising the National Transport Authority's (NTA) Eastern Regional Model (ERM) together with a disaggregated Local Area Model (LAM), the strategic and local level impacts of the Planning Scheme on the existing and planned transport network have been assessed (see accompanying document – *Clonburris SDZ Transport Assessment and Transport Strategy* (2017) and the Movement Framework has been optimised to meet the sustainable objectives of this Planning Scheme including the following key principles.

Key Principles

- » To link the Development Areas of Clonburris with each other and with surrounding communities through a permeable and clear hierarchy of integrated streets and dedicated pedestrian and cycle routes;
- » To integrate appropriate pieces of infrastructure that overcome challenges to movement across the SDZ lands;
- » To develop a transport framework that maximises route choice and access to residential, education, retail, service, community and leisure uses by means of walking, cycling and public transport while balancing the needs of the car; and
- » To upgrade existing sections of strategic roads within the SDZ lands to integrated urban streets.



2.2.2 Public Transport Accessibility

The SDZ lands benefit from access to existing high quality public transport services that operate along the Kildare/Cork Railway Line, which includes a four track system between Park West and Hazelhatch railway stations. The No. 13 bus also currently operates as a high frequency service between Dublin City and Grange Castle Business Park, via the southern boundary of the SDZ Lands.

Commuter rail services to and from Dublin City Centre along the rail line have been augmented through the upgrading of the Phoenix Park Tunnel for regular rail passenger services. Access to services along the Kildare/Cork Railway Line from the SDZ lands are currently afforded by the Clondalkin-Fonthill Railway station. The Kishoge Railway Station, which was constructed along Grange Castle Road as part of the Kildare Route project, is not currently operating and is the subject of this Planning Scheme's Phasing Strategy (see Chapter 4).

Bus lanes are also in place to serve the SDZ lands along Grange Castle Road (R136), Fonthill Road North (R113), Adamstown Avenue (L1058) and Thomas Omer Way (L1059).

Further to the existing public transport infrastructure and services, the SDZ lands will be served (both directly and indirectly) by additional high quality public transport infrastructure projects planned under the NTA's *Transport Strategy for the Greater Dublin Area 2016 – 2035*. These projects include the DART Expansion Programme, the Lucan Luas, the Tallaght – Blanchardstown Core Orbital Bus Route and other Core Radial Bus Routes. These planned projects will connect the SDZ lands, including existing public transport services and infrastructure into an integrated cross metropolitan network of orbital and radial routes and will greatly expand the route and mode choice for public transport users including residents and employees in Clonburris.

Access to Public Transport

Key to maximising access to existing and planned public transport services within and in the vicinity of the SDZ lands will be the development of an integrated network of streets throughout the SDZ lands that promotes permeability and accessibility for different modes of transport.

Arterial and Link Streets (see Section 2.2.4 - Street Network and Vehicular Movement) will serve as strategic corridors for multiple modes of transport, including public transport, across the SDZ lands. These streets will help maximise access to existing and planned rail services, utilise and link existing bus lanes, serve core and local bus routes and contribute to the creation of multi-modal public transport interchanges at Clondalkin-Fonthill and Kishoge Railway Stations.

While Arterial Streets will accommodate strategic bus routes, Link Streets will accommodate local bus routes that will connect the SDZ lands together and provide the opportunity to connect planned Core Orbital Bus Routes with each other and with both rail stations (see accompanying Transport Assessment and Strategy for details).

The Transport Assessment and Strategy that accompanies this Planning Scheme, concludes that approximately 75% of residences will be located within 400 metres of a core bus service and 800 metres of a railway station. Furthermore, approximately 98% of residences will be located within 400 metres of a bus stop or within 800 metres of a train station. The public transport mode share for the SDZ lands is forecast to be approximately 25% in the AM and PM time periods. Key to maximising this accessibility will be the development of a network of pedestrian and cycle routes that will permeate the SDZ lands and further connect Arterial and Link Streets.

Planning applications for residential, retail or employment development within the SDZ lands shall provide for and/or integrate with a choice of direct or indirect multi-modal routes to existing or planned public transport nodes. Pedestrian and cyclist routes (dedicated or street integrated) and vehicular routes to existing or planned public transport stops shall therefore be provided. Further to the requirements of Section 2.8.2 of this Planning Scheme, such connectivity should be communicated and demonstrated via a Design Statement.

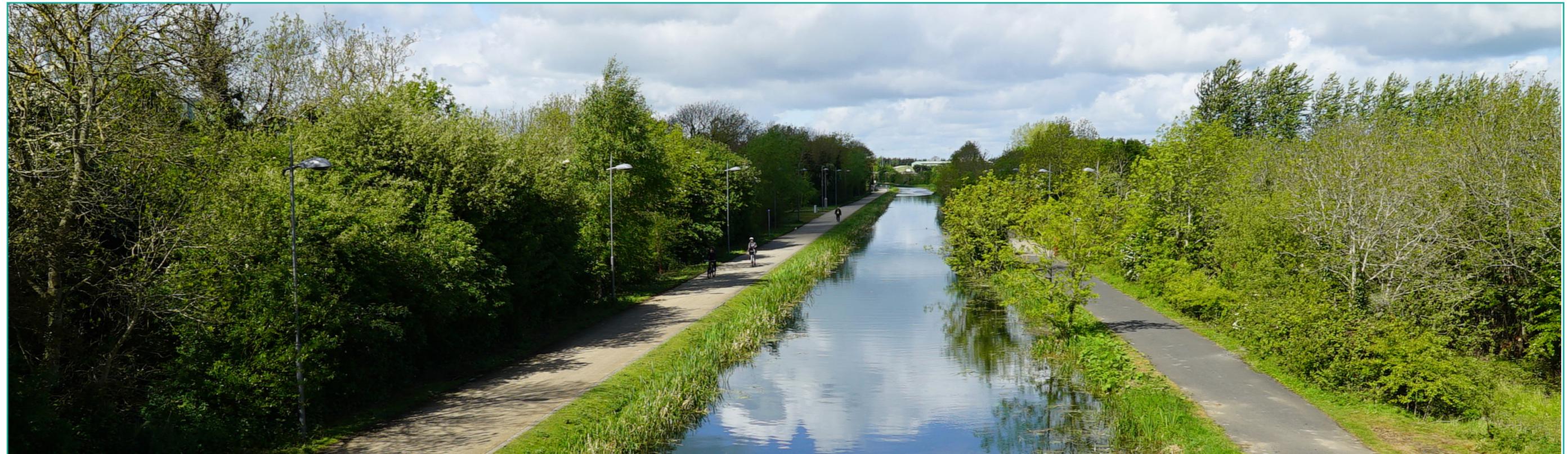
Transport Interchanges

Both the Kishoge and Clondalkin-Fonthill Railway stations will form focal points for the two planned urban centres within the SDZ lands. Both stations will serve as interchanges between rail, bus, car, walking and cycling particularly the station at Clondalkin-Fonthill, which has potential capacity to serve as an interchange with the Tallaght – Blanchardstown CBC planned under the NTA's *Transport Strategy for the Greater Dublin Area 2016 – 2035*.

A Park and Ride facility with associated disabled, bus, taxi and cycle parking facilities has been built at the Clondalkin-Fonthill Railway Station and a similar facility has been permitted at the Kishoge Railway Station under the Kildare Route Project Railway Order. In the interest of promoting the vitality and viability of both urban centres and place making, both Park and Ride facilities may be incorporated into mixed use building forms.

Approximately 75% of residences will be located within 400 metres of a core bus service and 800 metres of a railway station.





2.2.3 Pedestrian and Cycle Movement

The Grand Canal Green Route runs through and along the entire southern boundary of the SDZ lands and links the SDZ lands with Dublin City Centre in the form of a dedicated pedestrian and cycle route. This creates an opportunity for routes within the SDZ lands to link with this strategic corridor. The linear nature of the Kildare/Cork Railway Line also creates the opportunity to create a parallel green corridor and pedestrian and cycle route that will mirror and ultimately link with the Grand Canal Green Route.

Cycling and walking shall be encouraged throughout the SDZ lands with the creation of a network of dedicated and street integrated pedestrian and cyclist routes. In accordance with the *Design Manual for Urban Roads and Streets* (DTTS & DECLG, 2013) (DMURS), and the street typologies illustrated in this Section, all streets within the SDZ lands shall be designed for pedestrian and cyclist movement. Streets will also connect with and be augmented by dedicated strategic pedestrian and cycle routes (see Section 2.3 – Green and Blue Infrastructure) that will permeate open spaces, parks, urban spaces and linear green spaces. This will ultimately create a linked network that maximises route choice for pedestrians and cyclists.

Local pedestrian priority streets/routes shall also be provided in

designated areas in and around the Kishoge and Clonburris Urban Centres including high activity areas within retail cores and between Sub Sectors located either side of Arterial Streets.

All pedestrian and cycle routes shall be designed to be safe and accessible in accordance with DMURS and the NTA's *National Cycle Manual* (2011).

This Planning Scheme is formulated to ensure that development within the SDZ lands will be afforded direct or indirect access to dedicated pedestrian and cycle routes (strategic and local), Link Streets and Arterial Streets (see Section 2.2.4 - Street Network and Vehicular Movement). This Planning Scheme also seeks to ensure that all residential development will also be afforded direct or indirect access to dedicated pedestrian and cyclist routes to schools and local facilities especially parks, open spaces, public transport, retail and non-retail services.

Further to the requirements of Section 2.8.2 (Design Criteria) of this Planning Scheme, applications for development should demonstrate such connectivity via a Design Statement.

There shall be no barriers to pedestrian or cyclist movement between residential developments. Barriers created by the canal and railway shall be overcome by overbridges detailed in Section 2.2.5 - Bridges.

2.2.4 Street Network and Vehicular Movement

The street network that has been developed for the SDZ lands forms an integral part of this Planning Scheme's movement framework. It also provides the basic physical framework for a new structure of urban blocks and open spaces.

Existing and planned streets are classified within a hierarchy on the basis of their function, context and location. All street typologies within the hierarchy shall be designed in accordance with the requirements of DMURS (2013), the *National Cycle Manual* (2011), the *Guidelines for Setting and Managing Speed Limits in Ireland* (2015) together with the street typologies illustrated in this Planning Scheme.

The principle of all designated streets under this Planning Scheme is fixed and the alignment of each street including its centre line (see Figure 2.8.5 in Section 2.8 – Building Centre Line & Urban Grain) are either fixed or flexible depending on typology. The planned street hierarchy for the SDZ lands is summarised under Table 2.2.1 and illustrated in Figure 2.2.1.

The prescribed street network is designed to attract larger volumes of traffic to the more strategic Arterial and Link Streets at moderate speeds by offering users a legible and direct route through the SDZ lands. The slower nature of Local Streets will result in them being less attractive to through vehicular traffic. Each of the street typologies prescribed in Table 2.2.1 are further explained and illustrated under the relevant headings in this section.

Table 2.2.1 | Street Hierarchy, Alignment and Speed

Street Typology	Primacy	Examples	Alignment & Centre Line	Design Speed
Arterial Streets	Primary	Existing: Adamstown Avenue (L1058); Thomas Omer Way (L1059); Grange Castle Road (R136); & Fonthill Road North (R113). Proposed: None proposed.	Fixed	Neighbourhood: 30 – 50 km/h Urban Centre: 30 – 40 km/h
Link Streets	Secondary	Existing: Lock Road (R120); Lucan-Newlands Road (L1015); Griffen Avenue (L5582); & Hayden's Lane (part). Proposed: Internal east-west & north-south Link Streets.	Fixed	Neighbourhood: 30 – 50 km/h Urban Centre: 30km/h
Local Streets	Tertiary	Existing: Hayden's Lane (part) & Lynch's Lane. Proposed: Internal Local Streets & Homezones/Intimate Local Streets.	Flexible*	Neighbourhood: 15 - 30 kph Urban Centre: 15 - 30 kph

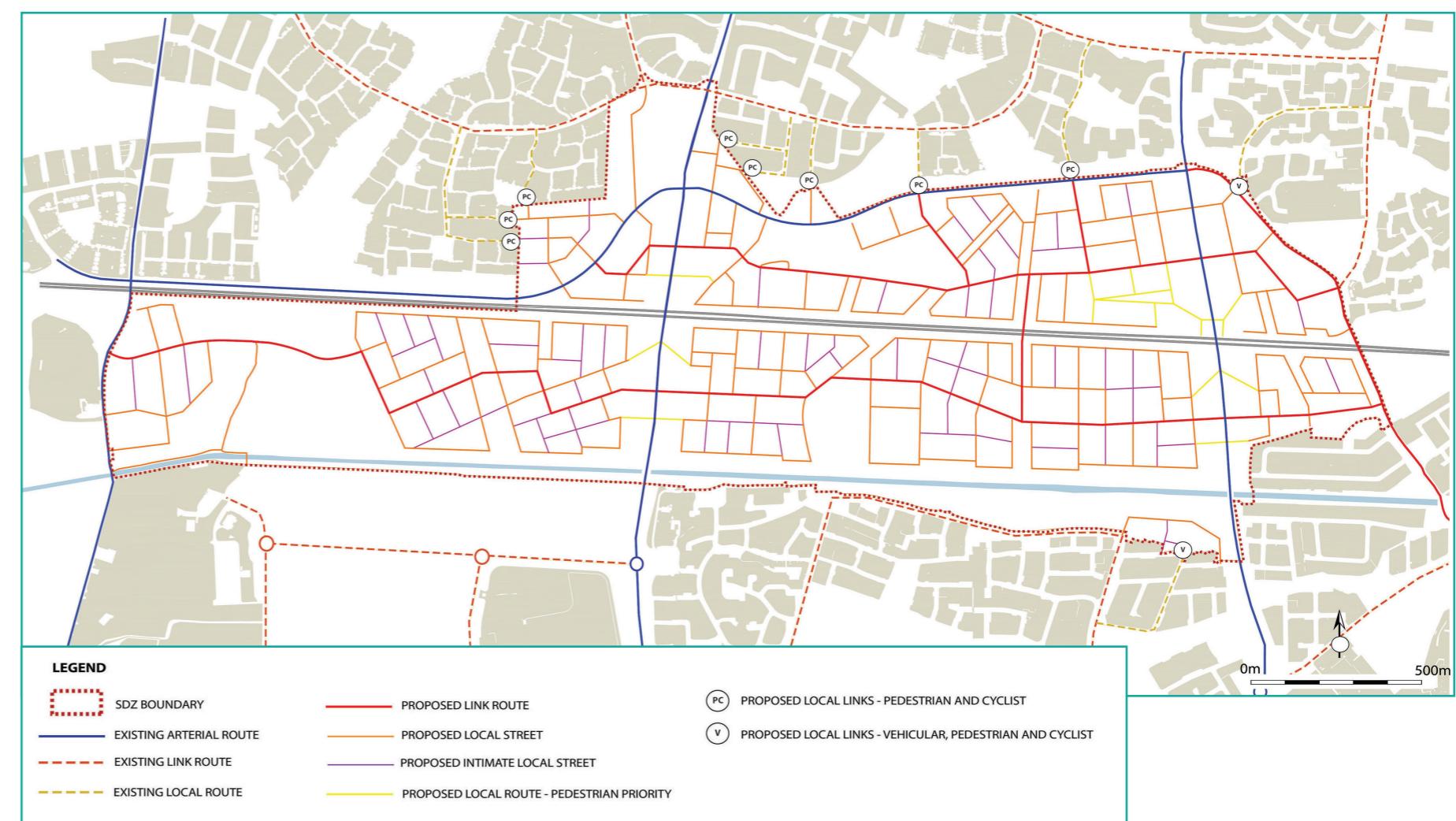
*With exception of streets with frontages prescribed under Section 3 (Development Areas)

With reference to DMURS and to maximise permeability and accessibility, the alignment of the planned Street Network should largely have an orthogonal grid layout and shall largely comprise an open network in terms of permeability. Local Streets that provide through routes for strategic pedestrian and cycle routes should be filtered to prioritise pedestrian and cyclist through access where junctions intersect with Link or Arterial Streets only.

Junctions between Local Streets and Link Streets will also need to be carefully considered to ensure the efficient operation of Link Streets, while also allowing vehicular through access and route choice along Local Streets within each traffic cell. Left-In, Left-Out-junctions may need to be considered to discourage delays from right turning movements along Link Streets. Cul-de-sacs that prevent or limit pedestrian or cyclist access between streets and/or spaces shall not be permitted.

To maximise the directness and legibility of strategic streets, offsets should be kept to a minimum and their requirement robustly demonstrated. Offsets along Link Streets should be avoided and, at a minimum, be spaced as far apart as possible from each other to reduce congestion between junctions.

Figure 2.2.1 | Full Street Hierarchy



Arterial Streets

With reference to DMURS, the main purpose of Arterial Streets is to connect major centres at a strategic level. Arterial Streets largely comprise major orbital and cross metropolitan routes such as Grange Castle Road, Fonthill Road North, Adamstown Avenue and Thomas Omer Way, which traverse and bound the SDZ lands. These roads have therefore been designated as Arterial Streets under this Planning Scheme. No further Arterial Streets are proposed.

In the interest of connectivity, place-making and the provision of safe and attractive routes for different modes of transport, it is proposed to upgrade the existing strategic roads as urban streets with reduced traffic speeds.

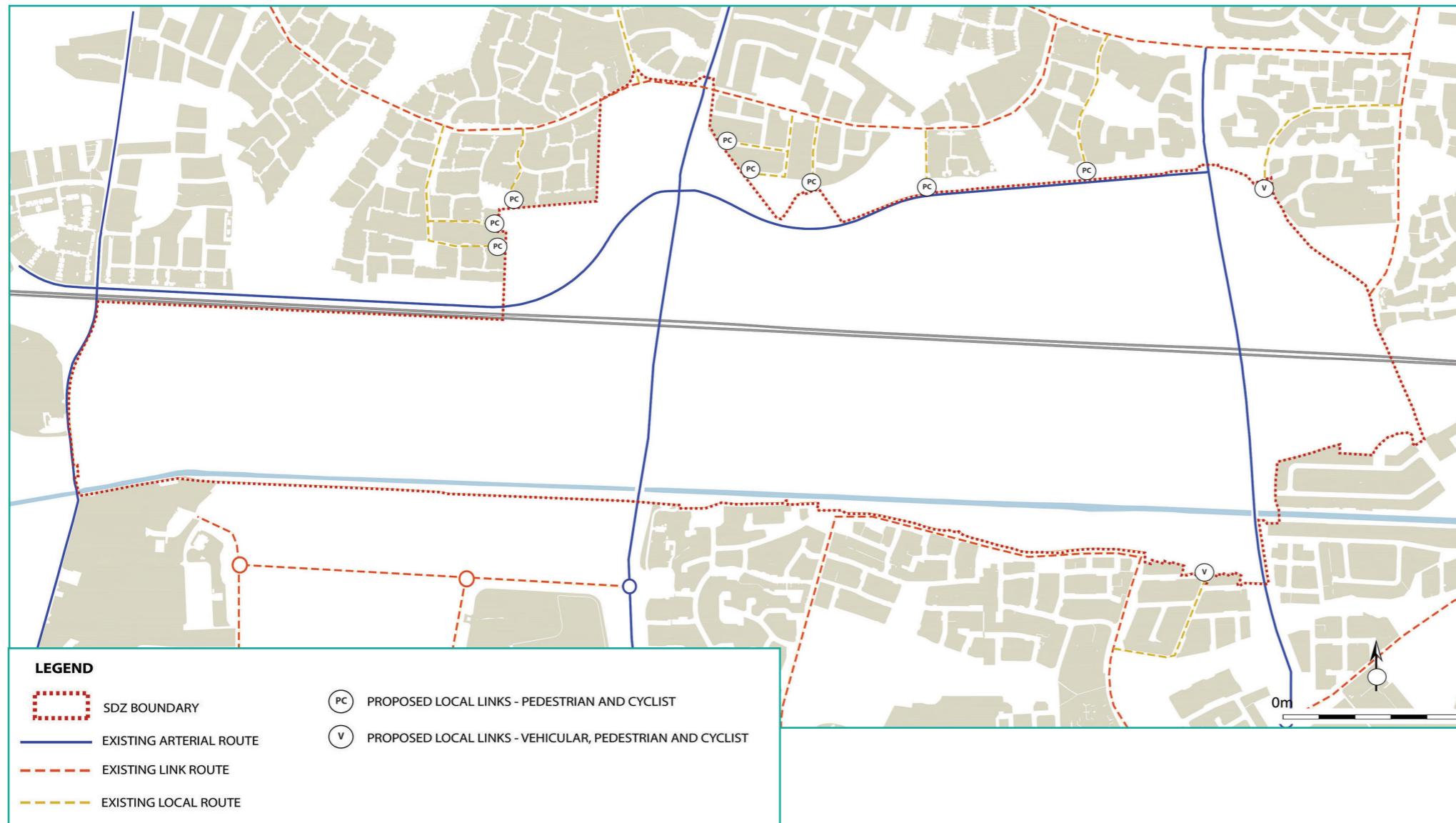
To promote walking and cycling and create streets that are more attractive

and urban in character, these streets should be upgraded and redefined through a combination of measures including signalised junctions, double planting, transition zones, on-street parking and frontage from development (see Section 2.8 – Built Form and Design Strategy for further details). Such streets, particularly Grange Castle Road and Fonthill Road North, will also continue to prioritise public transport and existing bus lanes will be retained and augmented.

There are a limited number of points along the designated Arterial Streets from which the planned street network within Clonburris can connect. Furthermore, there are a number of points where road levels change significantly thus forming barriers to movement, particularly along Grange Castle Road and Fonthill Road North.

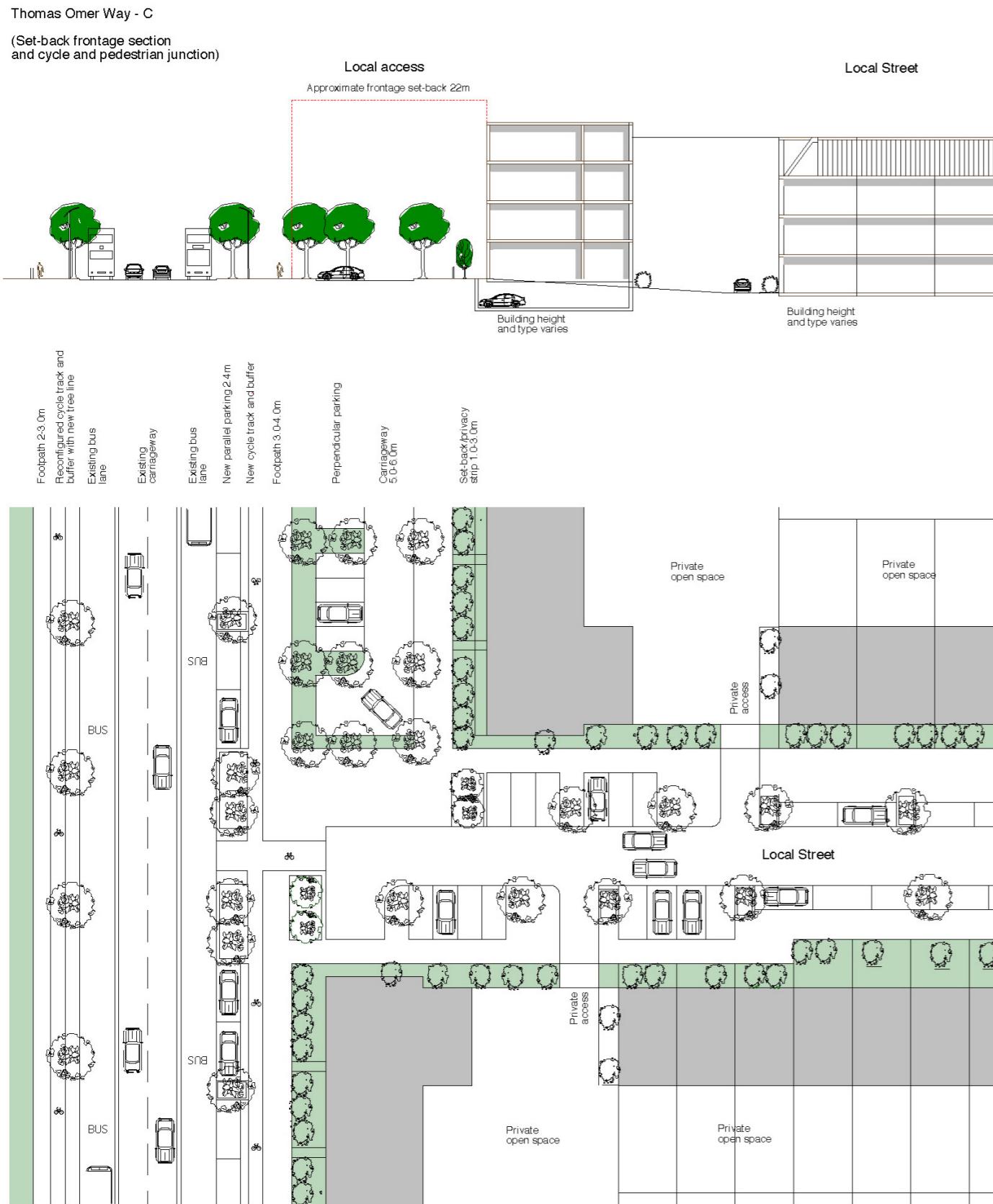
This Planning Scheme proposes a number of key junction improvements and new junctions/connections through and along the Arterial Streets to improve the connectivity and promote a street network that is more urban in character. These include pertinent upgrades of existing roundabout junctions to signalised junctions. The junction improvements identified and detailed under the Transport Assessment and Strategy that accompanies this Planning Scheme shall be DMURS compliant. The location of proposed junction upgrades and additional junctions along Arterial Streets (Proposed Signal Junctions) are also identified under Figure 2.2.7 (Overall Movement Concept) of this Planning Scheme.

Figure 2.2.2 | Arterial Street Framework



2 Planning Scheme Framework

Figure 2.2.3 | Example Arterial Street Upgrade with Filtered Junction



Link Streets

The primary function of Link Streets is to connect the SDZ lands together by connecting Arterial Streets, Urban Centres and Development Areas including local nodes and open spaces. Link Streets shall be designed to provide the main multi-modal spines for movement within the SDZ lands.

Link Streets will form a vital linking component between Arterial Streets and Local Streets and will be instrumental in creating a highly accessible and permeable street network. Link Streets will act as the principle corridors for the movement of pedestrians, cyclists, public transport (local buses) and vehicles within and through the SDZ lands.

Traffic speeds should be reduced along Link Streets in order to promote walking and cycling. In order to prevent the overuse of these movement corridors and to reduce traffic congestion, Link Streets shall be augmented with a choice of vehicular routes in each traffic cell via Local Streets.

Existing roads that are designated as Link Streets under this Planning Scheme (Lock Road, Griffeen Avenue and the Lucan-Newlands Road) shall be upgraded as traffic calmed streets. These upgraded streets will be augmented by a framework of new Link Streets that will traverse the SDZ lands in the form of east-west streets to the north and south of the rail line together with a connecting north-south Link Street.

All Development Areas shall therefore be afforded direct and convenient vehicular, pedestrian and cyclist access to Link Streets.

Figure 2.2.5 | Example Link Street

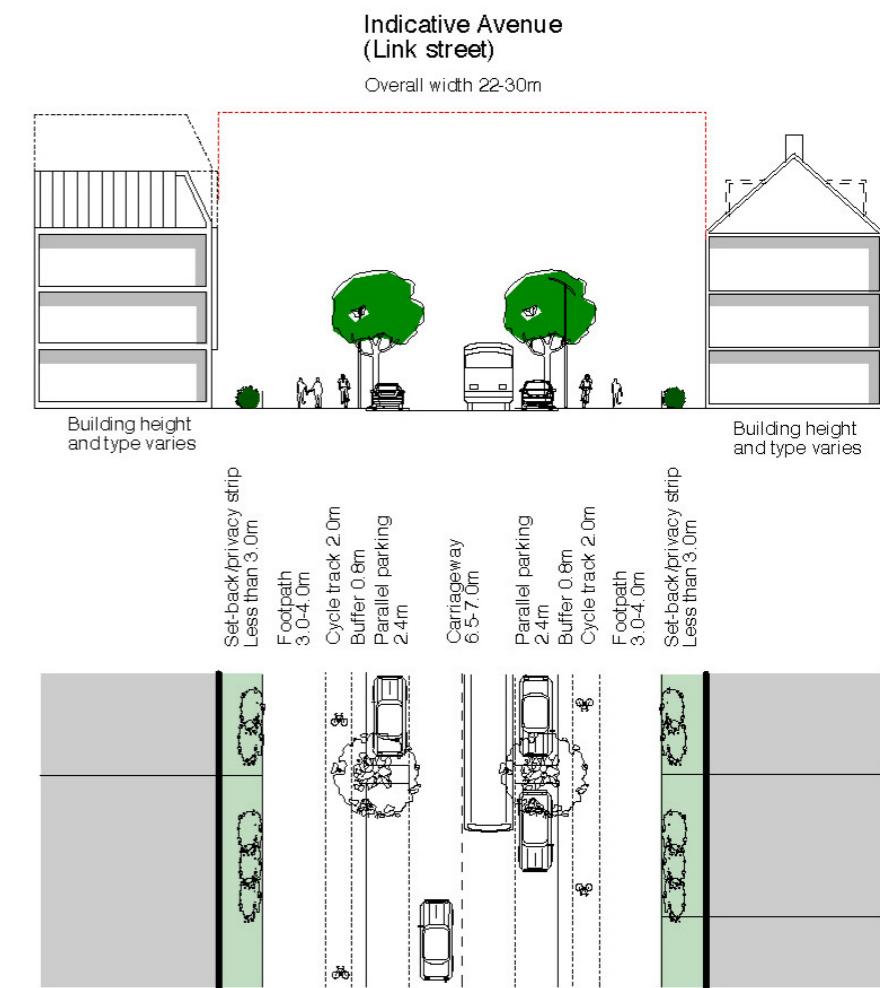
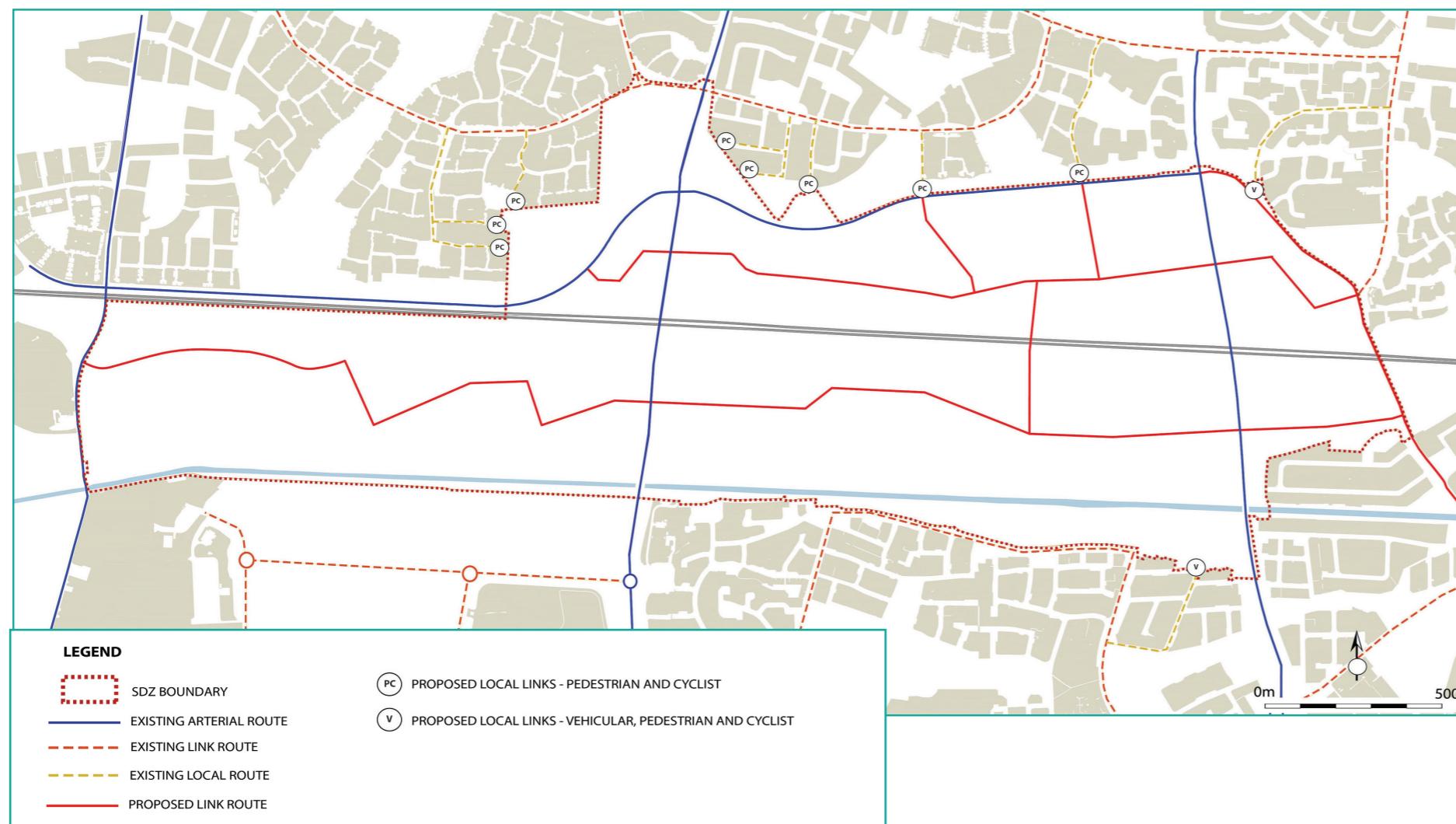


Figure 2.2.4 | Arterial and Link Street Framework



Local Streets

The purpose of Local Streets is to provide access within communities and to Arterial and Link Streets. Local Streets will act as quieter traffic calmed thoroughfares that are closely fronted and overlooked by development and will provide through access to neighbourhood blocks and local open spaces. These streets will ensure that development on the SDZ lands is accessible from a number of different directions.

By virtue of their speed and function, Local Streets will be unlikely to carry high levels of vehicular traffic and a greater emphasis will be placed on pedestrian movement, activity and place making.

The provision of public transport services on Local Streets should be avoided in order to ensure that their place function is not undermined.

Existing streets designated as Local Streets (part of Hayden's Lane and Lynch's Lane) shall be upgraded and improved accordingly.

Some Local Streets will comprise Home Zones or Intimate Local Streets in the form of fully shared surfaces for the integrated movement of vehicles, pedestrians and cyclists in quieter residential areas. Further to Local Street that provides strategic pedestrian and cycle through routes, junctions between Homezones and Link Streets should also be filtered to prioritise pedestrian and cyclist through access. Designated Pedestrian Priority Local Streets within the Clonburris and Kishoge Urban Centres shall also be designed to be fully pedestrianised outside of delivery hours (see Section 2.8 Built Form and Design).

Some Local Streets will comprise Home Zones or Intimate Local Streets in the form of fully shared surfaces for the integrated movement of vehicles, pedestrians and cyclists in quieter residential areas.

Figure 2.2.6 | Example Local Streets including Homezone (Intimate Scale)

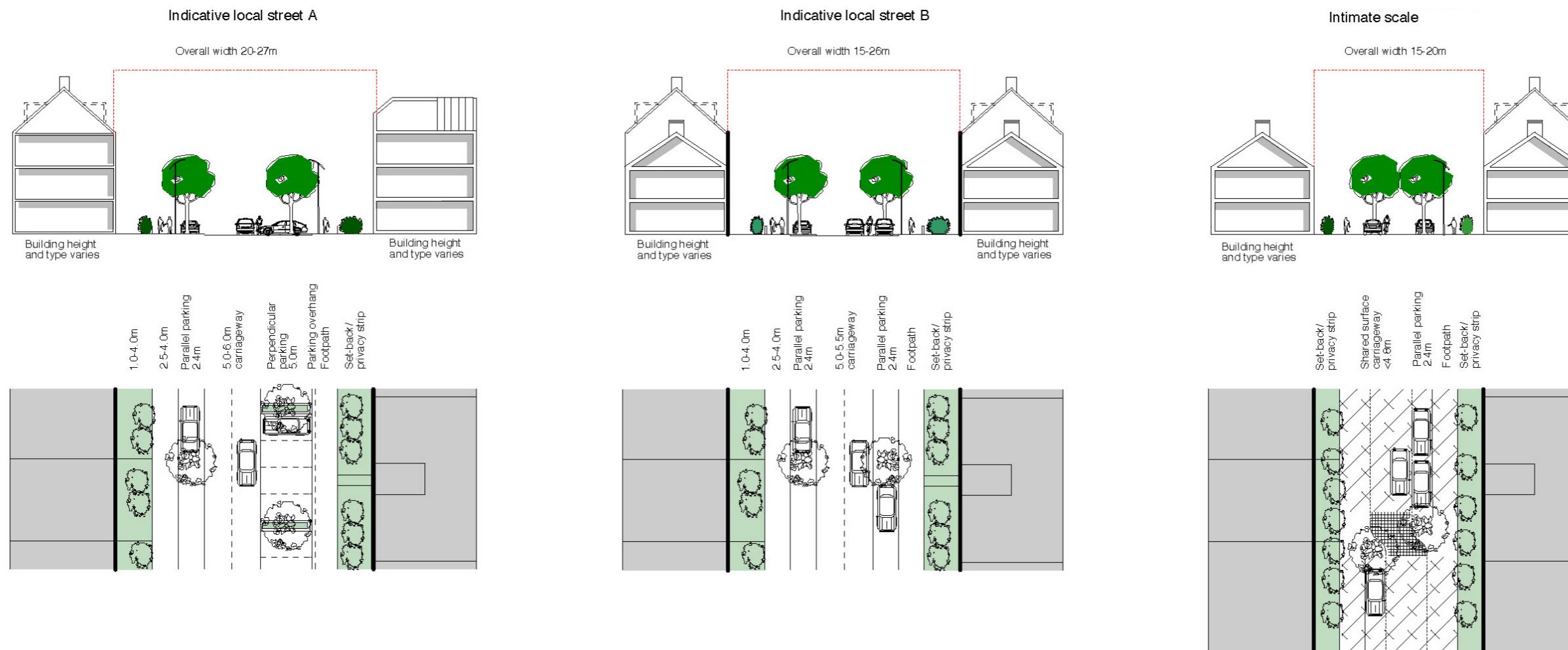
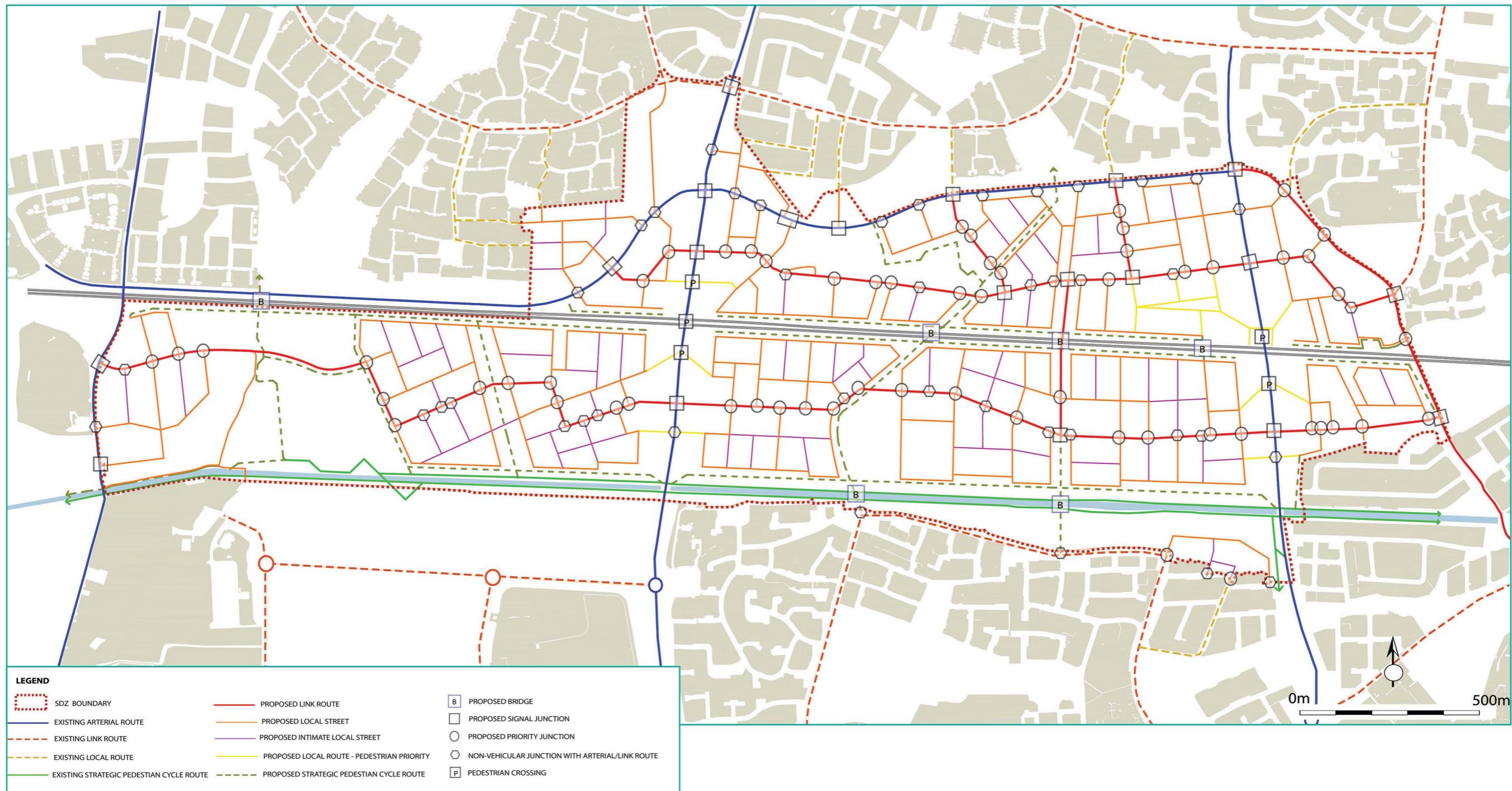


Figure 2.2.7 | Overall Movement Concept



2.2.5 Bridges

The barriers created by pre-existing strategic roads, the Grand Canal and the Kildare/Cork Railway Line form challenges to movement across the SDZ lands. Rather than being avoided or mitigated, these features will be integrated within the urban structure of the SDZ lands with important connections across them.

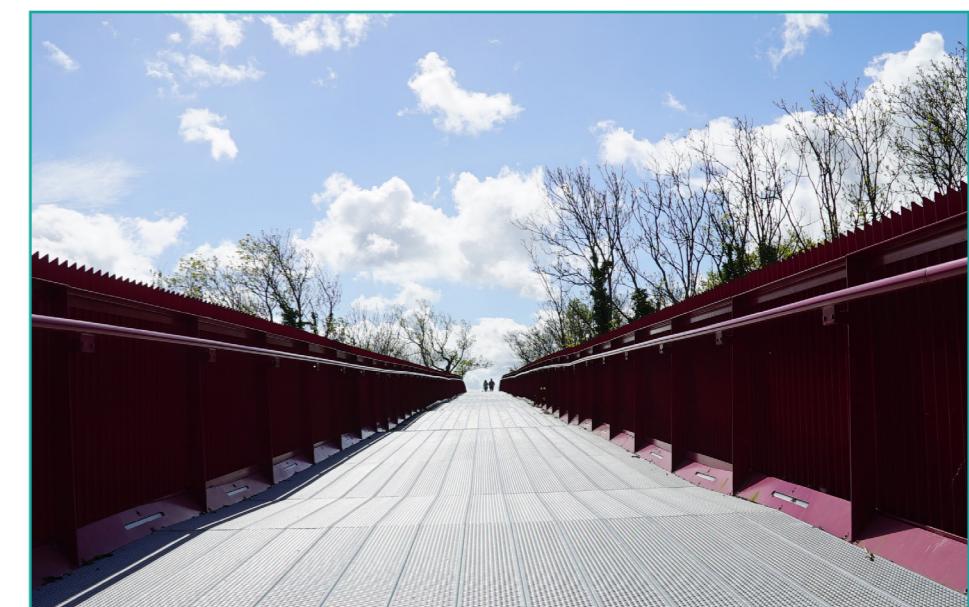
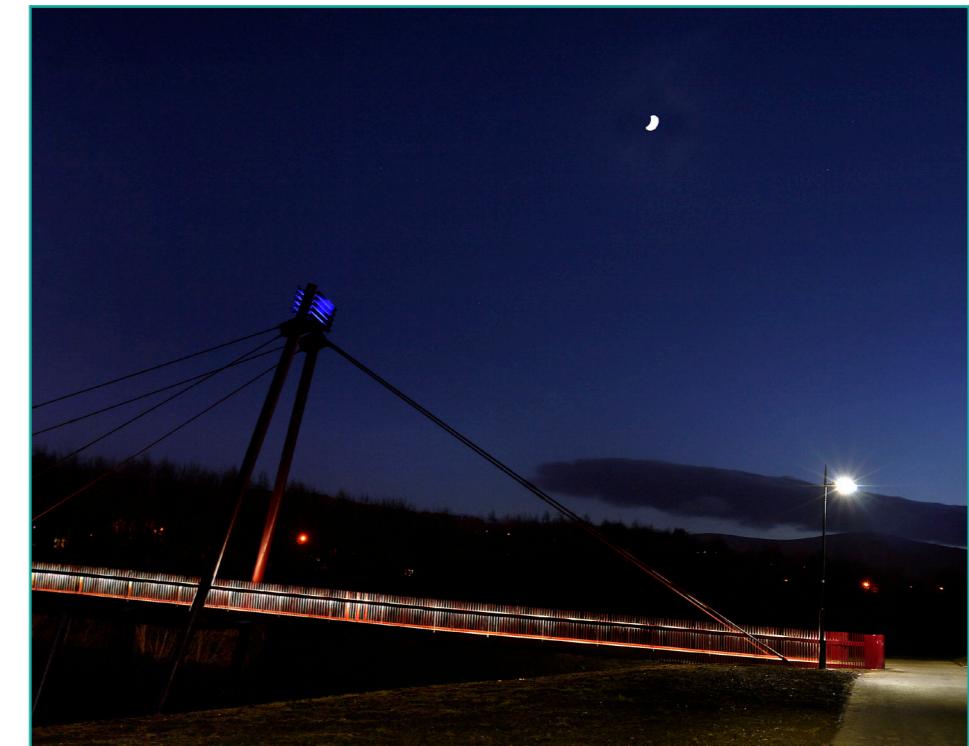
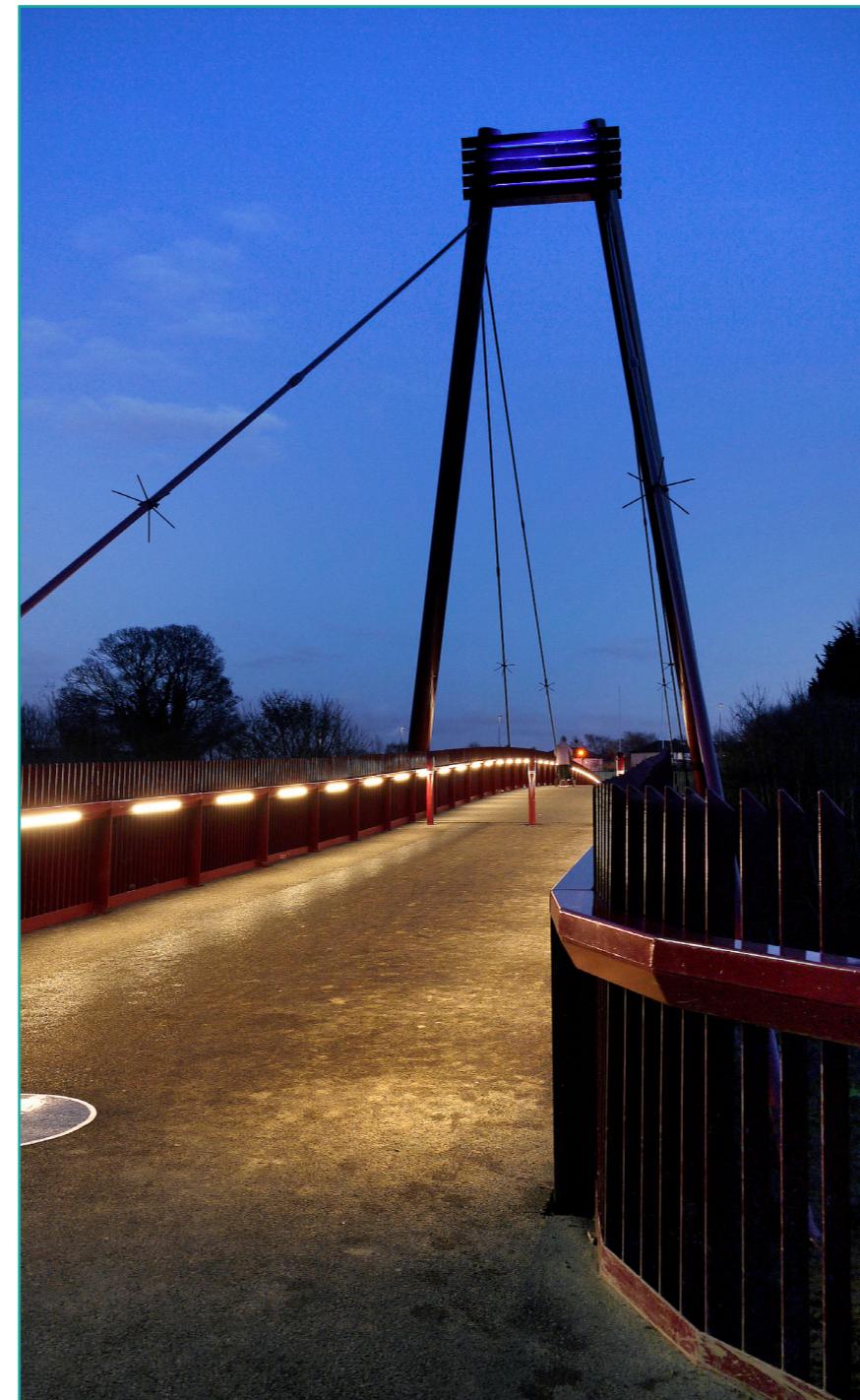
A number of bridges are required to enable north-south movement across the Canal and Railway for different modes. A total of five new bridges are proposed in addition to the upgrade of an existing pedestrian and cycle bridge to a Green Bridge at Hayden's Lane. Such bridges shall be provided in accordance with the Phasing Strategy detailed in Chapter 4.

The various types of bridges that are existing and proposed (13 in total) on the SDZ lands and the type of movement they will support is set out in the Table 2.2.2. The location of proposed bridges (including upgrade) is further detailed on the Overall Movement Concept drawing (Fig. 2.2.7). No level crossings over the railway line will be permitted.

Table 2.2.2 | Canal and Rail Bridges

Bridge Type	Number
Canal Overbridge – pedestrian & cyclist	X3 (including 1 existing)
Canal Overbridge – vehicular, public transport, pedestrian & cyclist	X3 existing
Rail Overbridge – pedestrian & cyclist	X3 (including 1 existing for upgrade as green bridge)
Rail Overbridge – vehicular, public transport, pedestrian and cyclist	X4 (including 3 existing)

In addition to the requirements set out under Section 2.11 (Biodiversity and Natural Heritage), where new canal crossings i.e. footbridges/cycle bridges are proposed, all canal crossings should be designed so as to avoid fragmentation of linear habitats associated with the Grand Canal corridor.



2.2.6 Parking

Car Parking Standards

In order to promote sustainable travel patterns, this Planning Scheme seeks to minimise the number of car spaces and maximise their use within the SDZ lands. A detailed car parking strategy and/or Workforce Travel Plan (also known as Mobility Management Plan – see section 2.2.7 and accompanying Transport Assessment and Strategy) that facilitates shared or reduced use of car parking by different uses (including residential and Park & Ride) should be submitted with applications for large scale mixed use development.

To allow for more efficient turnover of spaces, on-street parking (where provided) should not be allocated to individual dwellings. The sharing of spaces for residential development with Park and Ride facilities is also particularly encouraged.

The car parking standards for the key land uses in Clonburris are set out under the *South Dublin County Council Development Plan 2016 – 2022* and the Transport Assessment and Strategy that accompanies this Planning Scheme. The standards are maximum parking standards and should not be viewed as a target. Details in relation to the design of car parking are set out under Section 2.8 (Built Form and Design) of this Planning Scheme.

Further to the Accessibility Assessment carried out as part of the accompanying Transport Assessment and Strategy, Zone 2 parking standards prescribed under the *South Dublin County Council Development Plan 2016 – 2022* shall be applied to all areas that have been identified with an accessibility level of 1, 2 or 3 (see Fig. 2.2.8). Zone 1 parking standards shall be applied to all other areas of the SDZ lands.

The development of car free housing may be considered in the higher density areas of the SDZ lands adjacent to Public Transport interchanges and within the urban centres planned around the Clondalkin-Fonthill and Kishoge rail stations. Near zero or zero parking provision for individual developments may be acceptable subject to the degree of compliance with the following:

- » The proximity of the site to the Kishoge and Clondalkin-Fonthill Railway Stations;
- » The proximity of the development to services that fulfil occasional and day to day needs;
- » Demonstration that car parking can be shared between complementary land uses including Park and Ride Facilities;
- » The existence of a robust and achievable Workforce Management or Mobility Management Plan for the development;
- » The ability of people to fulfil multiple needs in a single journey;
- » The levels of car dependency generated by particular uses within the development;
- » The ability of residents to live in close proximity to the workplace;
- » Peak hours of demand and the ability to share spaces between different uses; and
- » Uses for which parking rates can be accumulated.

Electric Vehicle Parking

To facilitate the use of electrically operated cars and bicycles, all developments should provide facilities for the charging of electric vehicles at a rate of up to 10% of the car parking provision. The remainder of parking spaces should be capable of accommodating future charging points.

Bicycle Parking Standards

Secure bicycle parking shall be provided throughout Clonburris and shall be designed in accordance with the NTA's *National Cycle Manual (2011)*. Every effort shall therefore be made to ensure that bicycle parking is sheltered, secure and designed in a manner that integrates appropriately into the public realm. The minimum parking standards for the SDZ lands are set out under the *South Dublin County Council Development Plan 2016 – 2022* and the Transport Assessment and Strategy that accompanies this Planning Scheme.

Figure 2.2.8 | Accessibility Levels for Identification of Car Parking Zones



Source: Clonburris Strategic Development Zone Transport Assessment and Strategy (2017)

2.2.7 Transport Assessment & Mobility Management

Traffic and Transport Assessments

In addition to the Transport Assessment and Strategy that accompanies this Planning Scheme, the need for Transport and Traffic Assessments (TTAs) should be considered on a case by case basis for developments that have the potential to generate a significant increase in trips on the overall transport network. The thresholds for TTAs are set out under the NTA's *Traffic Management Guidelines* (2003) and, in the case of developments that could affect national roads, the NRA's *Traffic and Transport Assessment Guidelines* (2014), should be utilised to help inform whether a TTA is necessary.

TTAs will largely be required to address wider public transport, walking and cycling network issues, rather than singularly focusing on impacts on the immediate street network. Such assessments should demonstrate that there is sufficient public transport, pedestrian, cyclist and road capacity to serve the development and should also provide a clear rationale for the proposed level of car parking having regard to existing and planned public and active transport facilities.

Mobility Management Plans

An overall strategic Mobility Management Plan (MMP) framework has been prepared for this Planning Scheme as part of the accompanying Transport Assessment and Strategy. Individual MMPs or Workplace Travel Plans (WTP) should also accompany applications for larger sized developments in accordance with the recommendations of the NTA's *Achieving Effective Workplace Travel Plans: Guidance for Local Authorities* (2012).

Such plans should outline a series of measures to encourage sustainable travel modes and reduce car borne traffic within a development. These may include proposals to encourage cycling and walking, car sharing, car-pooling, flexible working hours and public transport use etc.

